TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE	DATE 7/5/2012	TRANSMITTAL NO. 019

Section I – REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS

TO:	FROM:	CONTRACT NO.	CHECK ONE:
Department of Navy Naval Facilities Eng. Command Southwest Division 1220 Pacific Highway San Diego, CA 92132-5190	Engineering/Remediation Resources Group, Inc. 115 Sansome Street, Suite 200 San Francisco, CA 94104	N62473-09-D-2608	☑ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPEC. NO 31 00 00	PROJECT TITLE AND LOCATION: Parcels UC-1 and UC-2 Remedial Action Hunters Point Naval Shipyard, San Francisco, CA		CHECK ONE: THIS TRANSMITTAL IS FOR ☐ FIO ☑ GOVERNMENT APPROVAL

ITEM NO.	DESCRIPTION OF ITEM SUBMITTED *(Type, size, model number, etc.)*	MFG OR CONTR CAT., CURVE DRAWING OR BROCHURE NO.	NO. OF COPIES	CONTRACT REFERENCE DOCUMENT SPEC. PARA. NO.	CONTRACT REFERENCE DOCUMENT DRAWING SHEET NO.	FOR CONTRACTOR USE CODE	VARIATION	FOR CE USE CODE
1	SD-06, Field Test Reports: Borrow Source Assessment Top Soil	NA	electronic only	1.3.4c, 2.1, 3.2, 3.12	NA	A	None	

REMARKS

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.

Elizabeth Binning, P.E.

NAME AND SIGNATURE OF CONTRACTOR

Section II – APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

Borrow Source Assessment

Contract No. N62473-06-D-2608	*CTO No:* 009	*Borrow Source ID:* RTSF

Preparer: Elizabeth Binning	*Date:* 06/19/2012
Planned Backfill Usage: Top Soil	
Source of Material: Rice Trucking and Soil Farm	
Location of Borrow Source: The Rice Trucking Soil Farm borrow source is located in Half Moon Bay, CA in San Mateo County. The address is 2119 South Cabrillo Hwy (Hwy 1), Half Moon Bay, CA.	
Estimated Quantity of Borrow Available: 3,000 cubic yards	

	Geotechnical	*Chemistry*	*Radiological*
Sample I.D.:	BS-RTSF-01	UC1/2-BS-05 through -08	UC1/2-BS-05 through -08

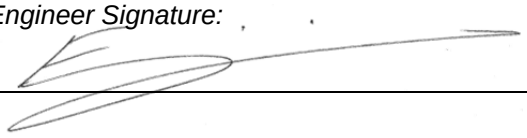
ATTACHMENTS

	Attached	***Not Applicable***	***Specify***
Work Plan Section/Tables for geotechnical:	X		Final Design Basis Report, Specifications Section 31 00 00 Earthwork, Paragraph 2.1.1
Geotechnical Data:	X		Geotechnical Data Summary and Comparison Table & BS-RTSF-01 Geotechnical Lab Data
Logs of Subsurface Explorations:		X	
SAP Section/Tables for Analytical:	X		Remedial Action Work Plan, Appendix B Sampling and Analysis Plan, Worksheets 15.1-15.9
Chemistry Data:	X		Chemistry Data Summary and PAL Comparison Table & UC1/2-BS-05 through -08 Chemistry Lab Data
SAP Section/Tables for Radiological:	X		Remedial Action Work Plan, Appendix B Sampling and Analysis Plan, Worksheet 15.9 and 15.10.
Radiological Data:	X		Radiological Data Summary and PAL Comparison Table & UC1/2-BS-05 through -08 Radiological Lab Data
Other:		X	

GEOTECHNICAL DATA EVALUATION

Class 1 Results are below established standards	Class 3 One or more results exceeded established standards
[X]	[ ]

Explanation for Class 3 (Attach additional sheet if necessary):
NA

Engineer Signature: 	*Date:* 6/19/2012

ERRG

Borrow Source Assessment

Contract No. N62473-06-D-2608	*CTO No:* 009	*Borrow Source ID:* RTSF

CHEMISTRY DATA EVALUATION

Class 1	Class 2	Class 3
Analytes are below established criteria **AND** Analytes without established standards are not detected [X]	Non-metal analytes are below the PALs **AND** Metal analytes are below the PALs **AND** Detected analytes without an established PAL are deemed 'acceptable' by the Chemist [ ]	One or more non-metal analytes exceeds the PALs **OR** One or more metal analytes exceeds the PALs **OR** Detected analytes without an established PAL are deemed "not acceptable" by the Chemist [ ]

Explanation for Class 2 or 3: (Attach additional sheet if necessary):
See notes on Chemistry Data Summary and Project Action Limit Comparison Table.

Chemist Signature:	*Date:* 6/19/2012

RADIOLOGICAL DATA EVALUATION

Class 1	Class 3
Results are below established standards [X]	One or more results exceeded established standards [ ]

Explanation for Class 3 (Attach additional sheet if necessary)
NA

Chemist Signature:	*Date:* 7/2/2012

APPROVAL

Project CQC Manager Signature:	*Date:* 6/19/2012
Project Manager Signature:	*Date:* 6/19/2012
DON Representative Signature:	*Date:* 7/3/2012

ERRG

Geotechnical Data Summary and Project Specifications Comparison Table

	Soil Property	BS-RTSF-01 Results	Soil Cover Criteria	Soil Cover Criteria Check	Top 12 inches Soil Cover Criteria	Top 12 inches Soil Cover Criteria Check
Atterberg Limits	Plasticity Index	NP	25	OK	15	OK
	Liquid Limit	NP	45	OK	35	OK
Particle Size (Percent Passing)	3-inch sieve	100	100	OK	100	OK
	3/4-inch sieve	100	≥ 90	OK	≥ 90	OK
	#4 sieve	96.3	≥ 60	OK	≥ 60	OK
	#200 sieve	26.4	≤ 60	OK	≤ 30	OK
Soil Classification		SM	SM, SC, CL,or ML	OK	SM or SC	OK

SECTION 31 00 00
EARTHWORK

PART 1 GENERAL

Prepare subgrade for construction or repair of the asphalt pavement cover based on the Drawings. Repair all voids to meet the surrounding grade for final asphalt concrete surface. Construct a soil cover of minimum 2-foot thickness over the portion of the site as shown on the Drawings. Install erosion control blanket on slopes to be vegetated. Install erosion control blanker as shown in the Drawings for preparation of the planting mix described in Section 32 92 19 VEGETATION.

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only. Unless otherwise noted, the latest version of each publication is to be used.

ASTM INTERNATIONAL (ASTM)

ASTM D 422	Particle-Size Analysis of Soils
ASTM D 698	Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cu. ft. (600 kN-m/cu. m.))
ASTM D 1388	Standard Test Method for Stiffness of Fabrics
ASTM D 1556	Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3)
ASTM D 2216	Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 2487	Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 4318	Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 6475	Standard Test Method for Measuring Mass Per Unit Area of Erosion Control Blankets
ASTM D 6525	Standard Test Method for Measuring Nominal Thickness of Permanent Rolled Erosion Control Products
ASTM D 6818	Standard Test Method for Ultimate Tensile Properties of Turf reinforced Mats
ASTM D 6938	Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)

b. Confirmation Screening Sampling Results; G

See Paragraph 2.3 Sub Grade for testing requirements. Submit raw data and weekly.

c. Borrow Source Assessment; G

See Paragraph 3.6.1 Borrow Source Assessment for testing requirements. Submit raw data as available and summarize weekly.

d. Moisture Content and Density Test in Place Fill

1.3.5 SD-07, Certificates

a. California Registered Civil Engineer or Engineering Geologist certification

b. Erosion control blanket MARV certificate; G

1.3.6 SD-11, Closeout Submittals

a. Final cover survey with As-Built Drawings

b. Survey information on permanent local site monuments

1.4 DELIVERY, STORAGE, AND HANDLING

Perform in a manner to prevent contamination or segregation of materials. Handle and protect material to prevent damage and replace if damaged.

The erosion control blanket shall be packaged, shipped, stored, and handled by appropriate means so that no damage is incurred. Materials shall be delivered only after the required submittal has been received and approved by the Contracting Officer. Contractor shall be responsible for keeping the geonet free of dirt, dust, mud, or any other foreign materials. The geonet shall be protected from sunlight until it is installed. Any geonet found to be damaged shall be replaced with new material at the Contractor's expense. Each roll shall be labeled with the manufacturer's name, product identification, lot number, roll number, and roll dimensions.

1.5 EQUIPMENT

Equipment used to grade, compact, and place material shall be as described in the approved Materials Handling Plan. Equipment shall not accelerate or brake suddenly, turn sharply, or be operated at speeds exceeding 5.0 miles per hour.

PART 2 PRODUCTS

2.1 FILL MATERIAL

Imported material used as subgrade in the construction of the asphalt pavement, construction of the soil cover shall conform to specifications of 2.1.1 of this section. The soil shall be free of debris, roots, wood, scrap metal, vegetation, refuse, soft unsound particles, and deleterious or objectionable materials.

2.1.1 Soil Classification

Imported fill used as subgrade in the construction of the asphalt pavement cover shall be ASTM D 2487, classification GW, GM, SW, SP, SM, or SC. Fill material used of the construction or repair of the asphalt pavement must have an R value of greater than 20 per California Test 301. R value testing not required for fill material used in repair of the building foundations or in the construction of the soil cover.

Alternatively, for asphalt pavement subgrade, match import to existing conditions based on laboratory analytical verification of existing material.

The soil cover below 12 inches depth shall be ASTM D 2487, classification SM, SC, CL, or ML, with a maximum liquid limit of 45 percent and a maximum plasticity index of 25 percent per ASTM D 4318. The maximum particle size shall be 3 inches in its largest dimension with at least 90 percent passing a ¾-inch sieve, and at least 60 percent passing the No. 4 sieve, and not more than 60% passing a No. 200 sieve.

The soil in the upper 12 inches of the soil cover shall be ASTM D 2487, classification SM or SC, with a maximum liquid limit of 35 percent and a maximum plasticity index of 15 percent per ASTM D 4318. The maximum particle size shall be 3 inches in its largest dimension with at least 90 percent passing a ¾-inch sieve, at least 60 percent passing the No. 4 sieve, and not more than 30 percent passing a No. 200 sieve.

2.1.2 Testing Requirements

Imported fill used in subgrade shall be tested in accordance with the DTSC Clean Imported Fill Material Information Advisory requirements.

2.2 EROSION CONTROL BLANKET

The extended double net erosion control blanket shall be machine produced 100 percent biodegradable blanket of 70 percent agricultural straw and 30 percent coconut fiber with a functional longevity of up to 18 months. The blanket shall be of consistent thickness with the straw and coconut evenly distributed over the entire area of the mat. The blanket shall be covered on the top and bottom sides with 100 percent biodegradable woven natural organic fiber netting. The top netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands interwoven through the twisted machine strands to form an approximate 0.50 by 1.0 inch mesh. The blanket shall be sewn together on approximate 1.50 inch centers with degradable thread.

The erosion control blanket shall have the following physical properties:

PART 3 EXECUTION

3.1 SCHEDULE

Contractor is responsible for maintaining completed work and environmental controls (see Section 01 57 19.00 20 Temporary Environmental Controls) at all times, including gaps in construction activity.

3.2 BORROW SOURCE ASSESSMENT

Complete the Borrow Source Assessment Report at least 15 days prior to fill placement. No fill shall be placed until the Borrow Source Assessment Report is approved. The report shall include the following: location of each borrow source; estimated quantity of borrow available; logs of subsurface explorations; and laboratory test results.

ABC material used in the construction of the asphalt pavement is a suitable substitute for fill under the asphalt pavement provided the minimum requirement for the asphalt pavement is maintained. See Section 32 10 00 BITUMINOUS CONCRETE PAVEMENT.

3.2.1 Source Testing

Determine laboratory compaction characteristics and soil classification for each material used. Provide additional tests for every source change.

Sample all imported materials for the soil cover and topsoil layers once per source. Collect samples according to laboratory instruction. The laboratory shall analyze samples according to U.S. Environmental Protection Agency SW 846.

3.2.2 Fill

During construction representative samples shall be taken for testing at the frequencies listed in the table below from the borrow source prior to placement. Test results must comply with the requirements listed in Part 2 Products or the material will be rejected for use.

FILL MATERIAL TESTING FREQUENCIES		
Test	**Frequency**	**Method**
Grain size analysis	2,000 cubic yards	ASTM D 422
Atterberg limits	2,000 cubic yards	ASTM D 4318
Compaction	5,200 cubic yards	ASTM D 698

Note 1: Compaction test results shall be compared with the results obtained during the borrow source assessment. When there are significant differences, adjustments to the acceptable moisture content or density ranges shall be proposed by the Contractor for approval.

3.10 DISPOSAL OF SURPLUS MATERIAL

Dispose of all excavated soil, surplus materials, or other non-suitable material, including brush, refuse, stumps, roots, and timber into an appropriate off-site disposal facility. All organic debris hauled off base shall be recycled at a local composting facility. Contractor shall minimize the generation of waste, inorganic trash, or debris whenever possible, recycle as much material as possible, and utilize local waste recovery sites available in the area.

3.11 FINISHING OPERATIONS SOIL COVER

3.11.1 Grading

Finish grades of soil cover as indicated within plus or minus one tenth (0.1) of one foot. Grade smooth existing surfaces that are to remain but have been disturbed by the Contractor's operations. Final grading shall not take place without subsequent placement of erosion resistant seeding layer within 2 calendar days or as weather conditions dictate. Grid spacing shall be 20-foot by 20-foot or smaller for survey verification of thickness and grade.

3.11.2 Planting

Provide as specified in Section 32 92 19 VEGETATION.

3.11.3 Protection of Surfaces

Protect newly graded areas from traffic, erosion (see Section 01 57 19.00 20 Temporary Environmental Controls), and settlement that may occur. Repair or re-establish damaged grades, elevations, or slopes.

3.12 FIELD QUALITY CONTROL

3.12.1 Sampling

Collect the number and size of samples required to perform the specified tests of source materials.

3.12.1.1 Moisture Content and Density Tests of Final Subgrade Surface for Asphalt Pavement and Soil Cover

The following requirements apply to the final subgrade of the asphalt pavement including the existing soil when used as the final subgrade surface and the constructed soil cover.

Classification Testing

Borrow source assessment tests shall be performed on each principal type or combination of materials proposed for use as subgrade to ensure compliance with specified requirements. At least one set of borrow assessment tests shall be performed on each borrow source proposed for use. A set of borrow source assessment tests shall consist of Atterberg limits (ASTM D 4318), particle size analysis (ASTM D 422), and moisture content (ASTM D 2216). Based on borrow source assessment testing, soils shall be classified in accordance with ASTM D 2487.

Moisture-Density (Compaction) Testing

A representative sample from each principal type or combination of borrow materials shall be tested to establish compaction curves using ASTM D 698. At least one compaction test shall be performed on each borrow source proposed. A minimum of 5 points shall be used to develop each compaction curve.

Chemical Contamination Testing

Borrow used for the fill layers shall be free of contamination. Each proposed borrow source shall be sampled and analyzed for chemical contamination in accordance with DTSC Clean Imported Fill Material Information Advisory.

3.2.3 Construction Tests

See paragraph 3.11 FIELD QUALITY CONTROL

3.3 PROTECTION

3.3.1 Drainage and Dewatering

Provide for the collection and disposal of surface and subsurface water encountered during construction as described in the following sections.

3.3.1.1 Drainage

Drain the site during periods of construction to keep soil materials sufficiently dry. The Contractor shall establish storm drainage features at the earliest stages of site development. Throughout construction, grade the construction area to provide positive surface water runoff away from the construction activity or provide temporary ditches, swales, and other drainage features and equipment as required to maintain dry soils. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove unsuitable material and provide new soil material as specified herein. The Contractor is responsible for assessing the conditions of soil and groundwater presented by the plans and specifications and to employ necessary measures to permit construction to proceed.

Dewatering and removal of accumulated water shall be conducted using pumps or grading as necessary to provide a sufficient ground surface for construction of the remedy. Stormwater and dewatering provisions shall adhere to SECTION 01 57 19.00 20 Temporary Environmental Controls.

SMITH-EMERY SAN FRANCISCO
An Independent Commercial Testing Laboratory

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San Francisco, California 94124
(415) 642-7326
Fax (415) 642-7055

791 East Washington Blvd.
Los Angeles, California 90021-3043
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June 19, 2012

SESF File No. 67271
SESF Report No. G-12-146

ERRG
115 Sansome Street, Suite 200
San Francisco, California 94104
Attention: Elizabeth Binning

RE: HPS UC-1 & -2

SUBJECT: Report of Tests

TEST STANDARD: ASTM D422 (Sieve Analysis), ASTM D 4318 (Atterberg Limits), and ASTM D1557 (Laboratory Maximum Density/Optimum Moisture)

SOURCE: One soil sample from the Rice Trucking Soil Farm proposed for use on the above referenced project was collected by an ERRG representative and delivered to our laboratory on June 5, 2012.

REPORT OF TESTS
In compliance with your request, we have conducted the subject tests with the results presented below.

Sample Number	Description	Source
BS-RTSF-01	Brown silty Sand with trace gravel and organics (50-50 Top Soil)	Rice Trucking-Soil Farm

ASTM D422 (Sieve Analysis)
Grain Size Distribution Plot Attached

ASTM D4318 Plasticity Index
Non-Plastic

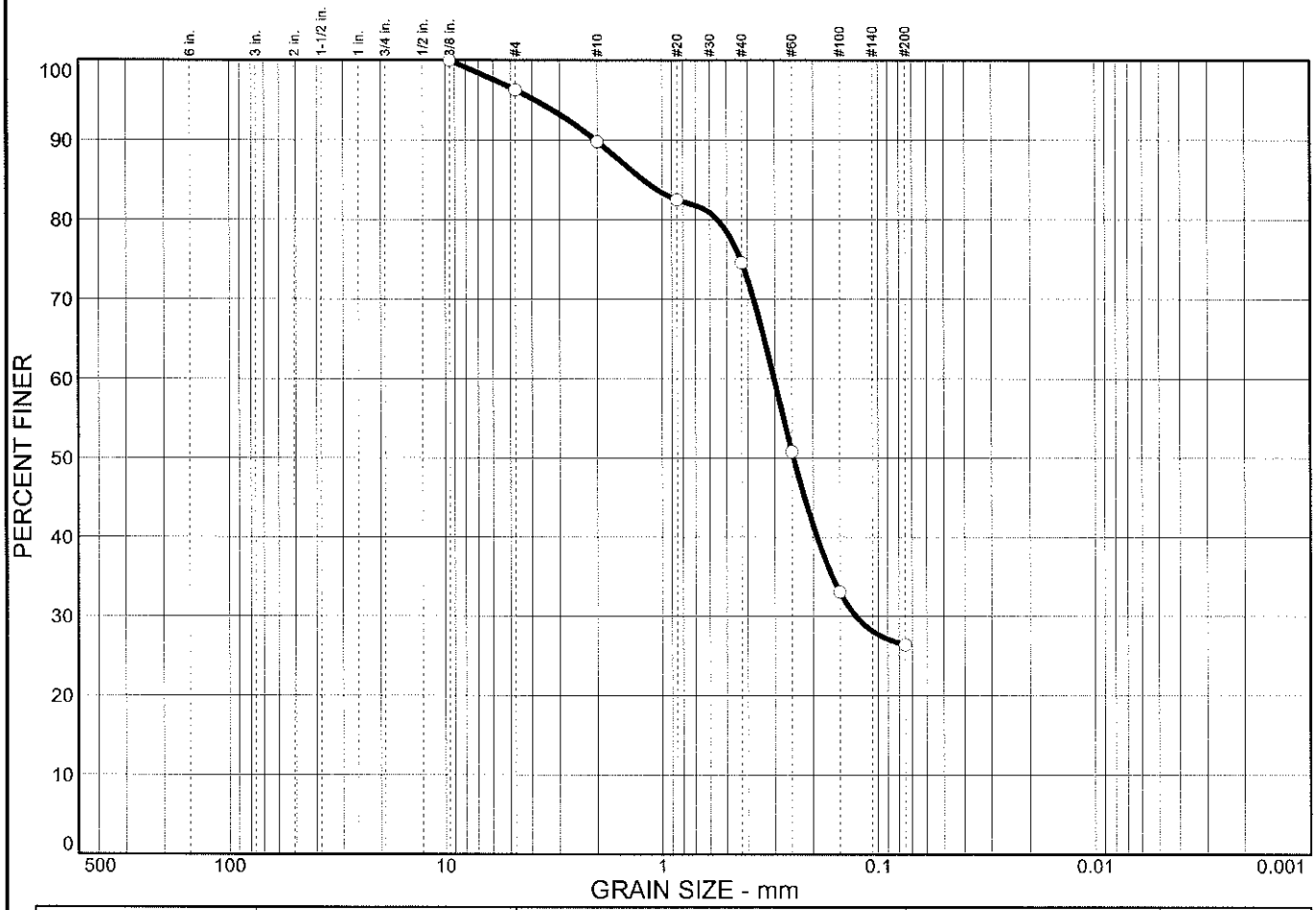
ASTM D1557 (Laboratory Maximum Density/Optimum Moisture)
Maximum Density Curve Attached

Respectfully submitted,
SMITH-EMERY SAN FRANCISCO

PATRICK MORRISON, P.G. #7174
GeoServices Manager

Attachments: ASTM D422 and D1557 Detailed Reports

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	3.7	69.9	26.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375 in.	100.0		
#4	96.3		
#10	89.8		
#20	82.5		
#40	74.6		
#60	50.8		
#100	33.1		
#200	26.4		

* (no specification provided)

Soil Description

Brown silty Sand with tracel gravel and organics

Atterberg Limits

PL= LL= PI= Non-Plastic

Coefficients

D_{85}= 1.22 D_{60}= 0.302 D_{50}= 0.246
D_{30}= 0.126 D_{15}= D_{10}=
C_u= C_c=

Remarks

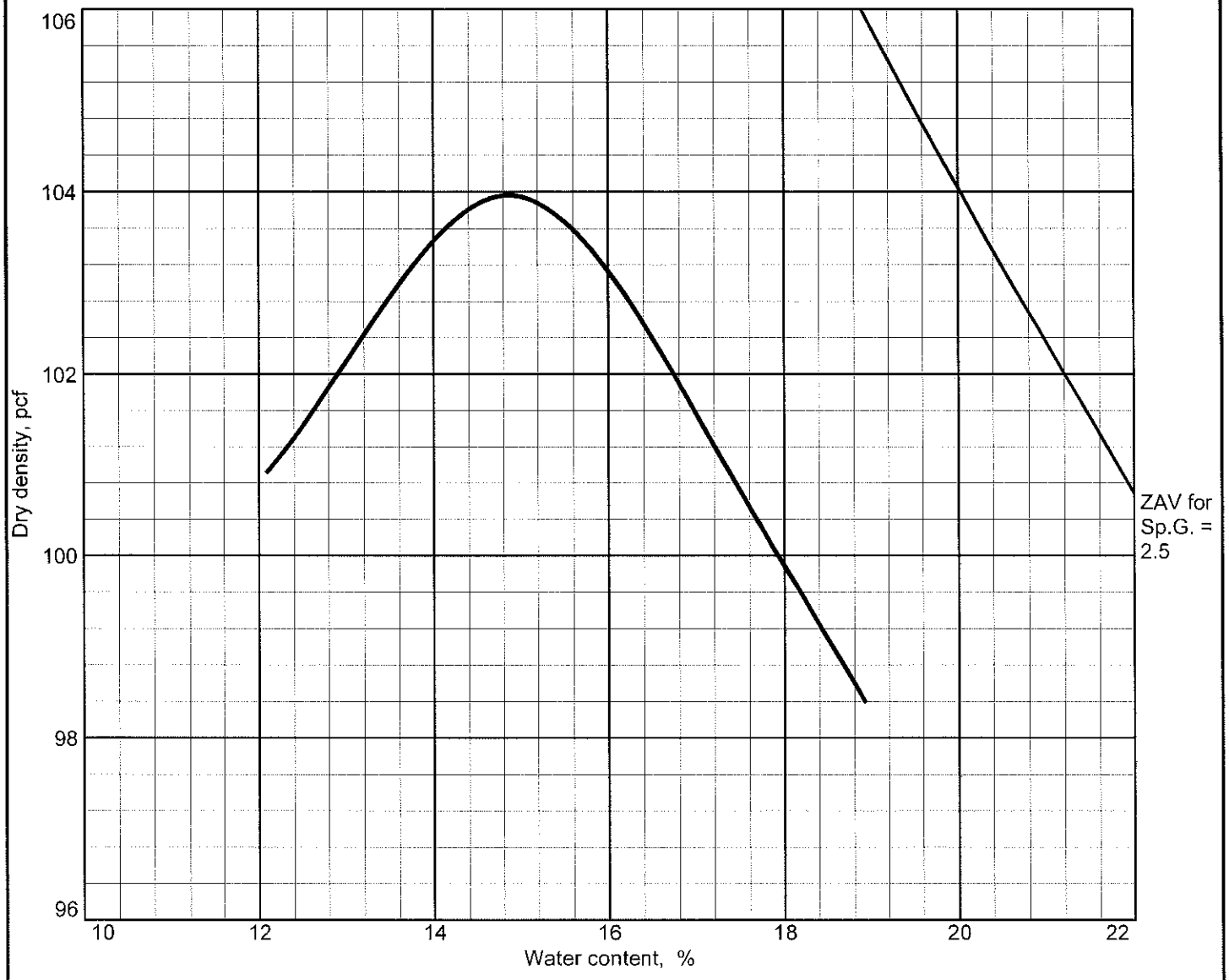
Sample No.: BS-RTSF-01 **Source of Sample:** Rice Trucking Soil Farm **Date:** 6/5/12

Smith-Emery Company

Client: ERRG
Project: HPS UC-1 &-2

Project No: 67271 **Figure** 1

COMPACTION TEST REPORT



Test specification: ASTM D 1557-00 Method B Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
						Non-Plastic	0.0	26.4

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 104.0 pcf Optimum moisture = 14.9 %	Brown silty Sand with tracel gravel and organics

Project No. 67271 **Client:** ERRG

Project: HPS UC-1 &-2

● **Source:** Rice Trucking Soil Farm **Sample No.:** BS-RTSF-01

Remarks:

COMPACTION TEST REPORT

Smith-Emery Company

Figure 2

	BS-05		BS-06		BS-07		BS-08				BS-05	BS-06	BS-07	BS-08	
	Results	RL	Results	RL	Results	RL	Results	RL	PAL	Units	Check	Check	Check	Check	Notes
CARB Method 435	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**							
Asbestos	0	0	0	0	0	0	0	0	0.25	%	OK	OK	OK	OK	
EPA 6010C															
Aluminum	8500	490	7400	520	7300	510	9300	490	77000	mg/Kg	OK	OK	OK	OK	
Antimony	1.1	0.49	0.84	0.52	0.88	0.51	0.61	0.49	31	mg/Kg	OK	OK	OK	OK	
Arsenic	2.6	0.25	2.3	0.26	2.5	0.26	3.2	0.24	11.1	mg/Kg	OK	OK	OK	OK	
Barium	54	0.25	43	0.26	42	0.26	60	0.24	15000	mg/Kg	OK	OK	OK	OK	
Beryllium	0.2	0.099	0.17	0.1	0.18	0.1	0.22	0.098	160	mg/Kg	OK	OK	OK	OK	
Cadmium	0.08	0.25	0.057	0.26	0.073	0.26	0.086	0.24	70	mg/Kg	OK	OK	OK	OK	
Chromium	65	0.25	62	0.26	60	0.26	76	0.24	120000	mg/Kg	OK	OK	OK	OK	
Cobalt	8.9	0.25	8.4	0.26	8.7	0.26	9.5	0.24	--	mg/Kg	--	--	--	--	See Note 1
Copper	13	0.26	8.3	0.27	9.4	0.27	11	0.25	3100	mg/Kg	OK	OK	OK	OK	
Iron	20000	490	20000	520	22000	510	20000	490	55000	mg/Kg	OK	OK	OK	OK	
Lead	42	0.25	15	0.26	17	0.26	19	0.24	400	mg/Kg	OK	OK	OK	OK	
Manganese	290	0.25	240	0.26	260	0.26	240	0.24	1431	mg/Kg	OK	OK	OK	OK	
Molybdenum	0	0.25	0	0.26	0	0.26	0	0.24	390	mg/Kg	OK	OK	OK	OK	
Nickel	47	0.25	48	0.26	47	0.26	80	0.24	1500	mg/Kg	OK	OK	OK	OK	
Selenium	1.1	0.49	1.4	0.52	1.5	0.51	1.1	0.49	390	mg/Kg	OK	OK	OK	OK	
Silver	0	0.25	0	0.26	0	0.26	0	0.24	390	mg/Kg	OK	OK	OK	OK	
Sodium	110	25	120	26	140	26	130	24	2300	mg/Kg	OK	OK	OK	OK	
Thallium	0	0.49	0	0.52	0	0.51	0	0.49	0.78	mg/Kg	OK	OK	OK	OK	
Vanadium	48	0.25	48	0.26	51	0.26	47	0.24	390	mg/Kg	OK	OK	OK	OK	
Zinc	54	0.99	33	1	38	1	33	0.98	23000	mg/Kg	OK	OK	OK	OK	
EPA 7471B															
Mercury	0.085	0.017	0.024	0.017	0.035	0.017	0.062	0.018	10	mg/Kg	OK	OK	OK	OK	
EPA 8015B															
Diesel C10-C24	25	5.3	1.6	1	1.7	1.1	2.3	1.1	2760	mg/Kg	OK	OK	OK	OK	
Gasoline C7-C12	0.049	1.1	0.061	0.95	0.053	1	0.068	1	2060	mg/Kg	OK	OK	OK	OK	
Motor Oil C24-C36	300	26	27	5.1	20	5.3	18	5.3	3800	mg/Kg	OK	OK	OK	OK	
EPA 8082															
Aroclor-1016	0	13	0	12	0	13	0	13	3900	ug/Kg	OK	OK	OK	OK	
Aroclor-1221	0	26	0	25	0	26	0	26	140	ug/Kg	OK	OK	OK	OK	
Aroclor-1232	0	13	0	12	0	13	0	13	140	ug/Kg	OK	OK	OK	OK	
Aroclor-1242	0	13	0	12	0	13	0	13	220	ug/Kg	OK	OK	OK	OK	
Aroclor-1248	0	13	0	12	0	13	0	13	220	ug/Kg	OK	OK	OK	OK	
Aroclor-1254	0	13	0	12	0	13	0	13	220	ug/Kg	OK	OK	OK	OK	
Aroclor-1260	2	13	0	12	0	13	0	13	220	ug/Kg	OK	OK	OK	OK	
EPA 8260B															
1,1,1,2-Tetrachloroethane	0	5.1	0	6	0	5.4	0	4.7	1900	ug/Kg	OK	OK	OK	OK	
1,1,1-Trichloroethane	0	5.1	0	6	0	5.4	0	4.7	8700000	ug/Kg	OK	OK	OK	OK	
1,1,2,2-Tetrachloroethane	0	5.1	0	6	0	5.4	0	4.7	560	ug/Kg	OK	OK	OK	OK	
1,1,2-Trichloroethane	0	5.1	0	6	0	5.4	0	4.7	1100	ug/Kg	OK	OK	OK	OK	
1,1-Dichloroethane	0	5.1	0	6	0	5.4	0	4.7	3300	ug/Kg	OK	OK	OK	OK	
1,1-Dichloroethene	0	5.1	0	6	0	5.4	0	4.7	240000	ug/Kg	OK	OK	OK	OK	
1,2,3-Trichlorobenzene	0	5.1	0	6	0	5.4	0	4.7	49000	ug/Kg	OK	OK	OK	OK	
1,2,3-Trichloropropane	0	5.1	0	6	0	5.4	0	4.7	5	ug/Kg	OK	OK	OK	OK	
1,2,4-Trichlorobenzene	0	5.1	0	6	0	5.4	0	4.7	22000	ug/Kg	OK	OK	OK	OK	
1,2,4-Trimethylbenzene	0	5.1	0	6	0	5.4	0	4.7	62000	ug/Kg	OK	OK	OK	OK	
1,2-Dibromo-3-Chloropropane	0	5.1	0	6	0	5.4	0	4.7	5.4	ug/Kg	OK	OK	OK	OK	
1,2-Dibromoethane	0	5.1	0	6	0	5.4	0	4.7	34	ug/Kg	OK	OK	OK	OK	

1,2-Dichlorobenzene	0	5.1	0	6	0	5.4	0	4.7	1900000	ug/Kg	OK	OK	OK	OK
1,2-Dichloroethane	0	5.1	0	6	0	5.4	0	4.7	430	ug/Kg	OK	OK	OK	OK
1,2-Dichloropropane	0	5.1	0	6	0	5.4	0	4.7	940	ug/Kg	OK	OK	OK	OK
1,3,5-Trimethylbenzene	0	5.1	0	6	0	5.4	0	4.7	780000	ug/Kg	OK	OK	OK	OK
1,3-Dichloropropane	0	5.1	0	6	0	5.4	0	4.7	1600000	ug/Kg	OK	OK	OK	OK
1,4-Dichlorobenzene	0	5.1	0	6	0	5.4	0	4.7	2400	ug/Kg	OK	OK	OK	OK
2-Butanone	0	10	0	12	0	11	0	9.4	28000000	ug/Kg	OK	OK	OK	OK
2-Chlorotoluene	0	5.1	0	6	0	5.4	0	4.7	1600000	ug/Kg	OK	OK	OK	OK
2-Hexanone	0	10	0	12	0	11	0	9.4	210000	ug/Kg	OK	OK	OK	OK
4-Chlorotoluene	0	5.1	0	6	0	5.4	0	4.7	1600000	ug/Kg	OK	OK	OK	OK
4-Methyl-2-Pentanone	0	10	0	12	0	11	0	9.4	5300000	ug/Kg	OK	OK	OK	OK
Acetone	0	20	0	24	0	22	0	19	61000000	ug/Kg	OK	OK	OK	OK
Benzene	0	5.1	0	6	0	5.4	0	4.7	1100	ug/Kg	OK	OK	OK	OK
Bromobenzene	0	5.1	0	6	0	5.4	0	4.7	300000	ug/Kg	OK	OK	OK	OK
Bromochloromethane	0	5.1	0	6	0	5.4	0	4.7	160000	ug/Kg	OK	OK	OK	OK
Bromodichloromethane	0	5.1	0	6	0	5.4	0	4.7	270	ug/Kg	OK	OK	OK	OK
Bromoform	0	5.1	0	6	0	5.4	0	4.7	62000	ug/Kg	OK	OK	OK	OK
Bromomethane	0	10	0	12	0	11	0	9.4	7300	ug/Kg	OK	OK	OK	OK
Carbon Disulfide	0	5.1	0	6	0	5.4	0	4.7	820000	ug/Kg	OK	OK	OK	OK
Carbon Tetrachloride	0	5.1	0	6	0	5.4	0	4.7	610	ug/Kg	OK	OK	OK	OK
Chlorobenzene	0	5.1	0	6	0	5.4	0	4.7	290000	ug/Kg	OK	OK	OK	OK
Chloroethane	0	10	0	12	0	11	0	9.4	15000000	ug/Kg	OK	OK	OK	OK
Chloroform	0	5.1	0	6	0	5.4	0	4.7	290	ug/Kg	OK	OK	OK	OK
Chloromethane	0	10	0	12	0	11	0	9.4	120000	ug/Kg	OK	OK	OK	OK
cis-1,2-Dichloroethene	0	5.1	0	6	0	5.4	0	4.7	160000	ug/Kg	OK	OK	OK	OK
Dibromochloromethane	0	5.1	0	6	0	5.4	0	4.7	680	ug/Kg	OK	OK	OK	OK
Dibromomethane	0	5.1	0	6	0	5.4	0	4.7	25000	ug/Kg	OK	OK	OK	OK
Ethylbenzene	0	5.1	0	6	0	5.4	0	4.7	5400	ug/Kg	OK	OK	OK	OK
Freon 12	0	10	0	12	0	11	0	9.4	94000	ug/Kg	OK	OK	OK	OK
Hexachlorobutadiene	0	5.1	0	6	0	5.4	0	4.7	6200	ug/Kg	OK	OK	OK	OK
Isopropylbenzene	0	5.1	0	6	0	5.4	0	4.7	2100000	ug/Kg	OK	OK	OK	OK
m,p-Xylenes	0	5.1	0	6	0	5.4	0	4.7	590,000	ug/Kg	OK	OK	OK	OK
Methylene Chloride	0	20	0	24	0	22	0	19	11000	ug/Kg	OK	OK	OK	OK
MTBE	0	5.1	0	6	0	5.4	0	4.7	43000	ug/Kg	OK	OK	OK	OK
Naphthalene	0	5.1	0	6	0	5.4	0	4.7	3600	ug/Kg	OK	OK	OK	OK
n-Butylbenzene	0	5.1	0	6	0	5.4	0	4.7	3900000	ug/Kg	OK	OK	OK	OK
o-Xylene	0	5.1	0	6	0	5.4	0	4.7	690000	ug/Kg	OK	OK	OK	OK
Propylbenzene	0	5.1	0	6	0	5.4	0	4.7	3400000	ug/Kg	OK	OK	OK	OK
Styrene	0	5.1	0	6	0	5.4	0	4.7	6300000	ug/Kg	OK	OK	OK	OK
Tetrachloroethene	0	5.1	0	6	0	5.4	0	4.7	550	ug/Kg	OK	OK	OK	OK
Toluene	0	5.1	0	6	0	5.4	0	4.7	5000000	ug/Kg	OK	OK	OK	OK
trans-1,2-Dichloroethene	0	5.1	0	6	0	5.4	0	4.7	150000	ug/Kg	OK	OK	OK	OK
trans-1,3-Dichloropropene	0	5.1	0	6	0	5.4	0	4.7	1700	ug/Kg	OK	OK	OK	OK
Trichloroethene	0	5.1	0	6	0	5.4	0	4.7	910	ug/Kg	OK	OK	OK	OK
Trichlorofluoromethane	0	5.1	0	6	0	5.4	0	4.7	790000	ug/Kg	OK	OK	OK	OK
Vinyl Chloride	0	10	0	12	0	11	0	9.4	60	ug/Kg	OK	OK	OK	OK
EPA 8270C														
1,2-Dichlorobenzene	0	350	0	340	0	350	0	360	1900000	ug/Kg	OK	OK	OK	OK
1,4-Dichlorobenzene	0	350	0	340	0	350	0	360	2400	ug/Kg	OK	OK	OK	OK
2,4,5-Trichlorophenol	0	350	0	340	0	350	0	360	6100000	ug/Kg	OK	OK	OK	OK
2,4,6-Trichlorophenol	0	350	0	340	0	350	0	360	44000	ug/Kg	OK	OK	OK	OK
2,4-Dichlorophenol	0	350	0	340	0	350	0	360	180000	ug/Kg	OK	OK	OK	OK

2,4-Dimethylphenol	0	350	0	340	0	350	0	360	1200000	ug/Kg	OK	OK	OK	OK
2,4-Dinitrophenol	0	710	0	680	0	700	0	710	120000	ug/Kg	OK	OK	OK	OK
2,4-Dinitrotoluene	0	350	0	340	0	350	0	360	1600	ug/Kg	OK	OK	OK	OK
2,6-Dinitrotoluene	0	350	0	340	0	350	0	360	61000	ug/Kg	OK	OK	OK	OK
2-Chloronaphthalene	0	350	0	340	0	350	0	360	6300000	ug/Kg	OK	OK	OK	OK
2-Chlorophenol	0	350	0	340	0	350	0	360	390000	ug/Kg	OK	OK	OK	OK
2-Methylnaphthalene	0	71	0	68	0	70	0	71	310000	ug/Kg	OK	OK	OK	OK
2-Methylphenol	0	350	0	340	0	350	0	360	3100000	ug/Kg	OK	OK	OK	OK
2-Nitroaniline	0	710	0	680	0	700	0	710	610000	ug/Kg	OK	OK	OK	OK
3,3'-Dichlorobenzidine	0	710	0	680	0	700	0	710	1100	ug/Kg	OK	OK	OK	OK
4,6-Dinitro-2-methylphenol	0	710	0	680	0	700	0	710	4900	ug/Kg	OK	OK	OK	OK
4-Chloro-3-methylphenol	0	350	0	340	0	350	0	360	6100000	ug/Kg	OK	OK	OK	OK
4-Chloroaniline	0	350	0	340	0	350	0	360	2400	ug/Kg	OK	OK	OK	OK
4-Nitroaniline	0	710	0	680	0	700	0	710	24000	ug/Kg	OK	OK	OK	OK
Benzoic acid	0	1800	0	1700	0	1800	0	1800	240000000	ug/Kg	OK	OK	OK	OK
Benzyl alcohol	0	350	0	340	0	350	0	360	6100000	ug/Kg	OK	OK	OK	OK
bis(2-Chloroethoxy)methane	0	350	0	340	0	350	0	360	180000	ug/Kg	OK	OK	OK	OK
bis(2-Chloroethyl)ether	0	350	0	340	0	350	0	360	210	ug/Kg	OK	OK	OK	OK
bis(2-Chloroisopropyl) ether	0	350	0	340	0	350	0	360	4600	ug/Kg	OK	OK	OK	OK
bis(2-Ethylhexyl)phthalate	0	350	0	340	0	350	0	360	35000	ug/Kg	OK	OK	OK	OK
Butylbenzylphthalate	0	350	0	340	0	350	0	360	260000	ug/Kg	OK	OK	OK	OK
Dibenzofuran	0	350	0	340	0	350	0	360	78000	ug/Kg	OK	OK	OK	OK
Diethylphthalate	0	350	0	340	0	350	0	360	49000000	ug/Kg	OK	OK	OK	OK
Di-n-butylphthalate	0	350	0	340	0	350	0	360	6100000	ug/Kg	OK	OK	OK	OK
Hexachlorobenzene	0	350	0	340	0	350	0	360	300	ug/Kg	OK	OK	OK	OK
Hexachlorobutadiene	0	350	0	340	0	350	0	360	6200	ug/Kg	OK	OK	OK	OK
Hexachloroethane	0	350	0	340	0	350	0	360	12000	ug/Kg	OK	OK	OK	OK
Isophorone	0	350	0	340	0	350	0	360	510000	ug/Kg	OK	OK	OK	OK
Nitrobenzene	0	350	0	340	0	350	0	360	4800	ug/Kg	OK	OK	OK	OK
N-Nitrosodiphenylamine	0	350	0	340	0	350	0	360	99000	ug/Kg	OK	OK	OK	OK
Pentachlorophenol	0	710	0	680	0	700	0	710	890	ug/Kg	OK	OK	OK	OK
Phenol	0	350	0	340	0	350	0	360	18000000	ug/Kg	OK	OK	OK	OK
EPA 8270C-SIM														
Acenaphthene	0	5.3	0	5.1	0	5.3	2.7	5.3	3400000	ug/Kg	OK	OK	OK	OK
Anthracene	1.2	5.3	0	5.1	0	5.3	9.1	5.3	17000000	ug/Kg	OK	OK	OK	OK
Benzo(a)anthracene	4.7	5.3	0	5.1	1.3	5.3	54	5.3	370	ug/Kg	OK	OK	OK	OK
Benzo(a)pyrene	5.7	5.3	0	5.1	1.1	5.3	52	5.3	330	ug/Kg	OK	OK	OK	OK
Benzo(b)fluoranthene	7.2	5.3	1.2	5.1	1.5	5.3	66	5.3	340	ug/Kg	OK	OK	OK	OK
Benzo(k)fluoranthene	1.9	5.3	0	5.1	0	5.3	18	5.3	1500	ug/Kg	OK	OK	OK	OK
Chrysene	5.6	5.3	0	5.1	1.3	5.3	60	5.3	15000	ug/Kg	OK	OK	OK	OK
Dibenz(a,h)anthracene	1.6	5.3	0	5.1	0	5.3	6.4	5.3	330	ug/Kg	OK	OK	OK	OK
Fluoranthene	6.8	5.3	1.1	5.1	1.5	5.3	82	5.3	2300000	ug/Kg	OK	OK	OK	OK
Fluorene	0	5.3	0	5.1	0	5.3	2.5	5.3	2300000	ug/Kg	OK	OK	OK	OK
Indeno(1,2,3-cd)pyrene	3.2	5.3	0	5.1	0	5.3	14	5.3	350	ug/Kg	OK	OK	OK	OK
Naphthalene	1.4	5.3	0	5.1	0	5.3	1.4	5.3	3600	ug/Kg	OK	OK	OK	OK
Pyrene	7.1	5.3	1.4	5.1	1.9	5.3	98	5.3	1700000	ug/Kg	OK	OK	OK	OK
EPA 9045D														
pH	7.5	1	7.4	1	8	1	7.8	1	8.5	SU	OK	OK	OK	OK

1. A sample specific Hunters Point ambient level (HPAL) was calculated based on an HPNS cobalt/magnesium regression-based relationship (PRC Environmental Management, Inc., 1995). See the attached "Cobalt/Magnesium Regression Relationship and Project Action Limit Comparison Table."

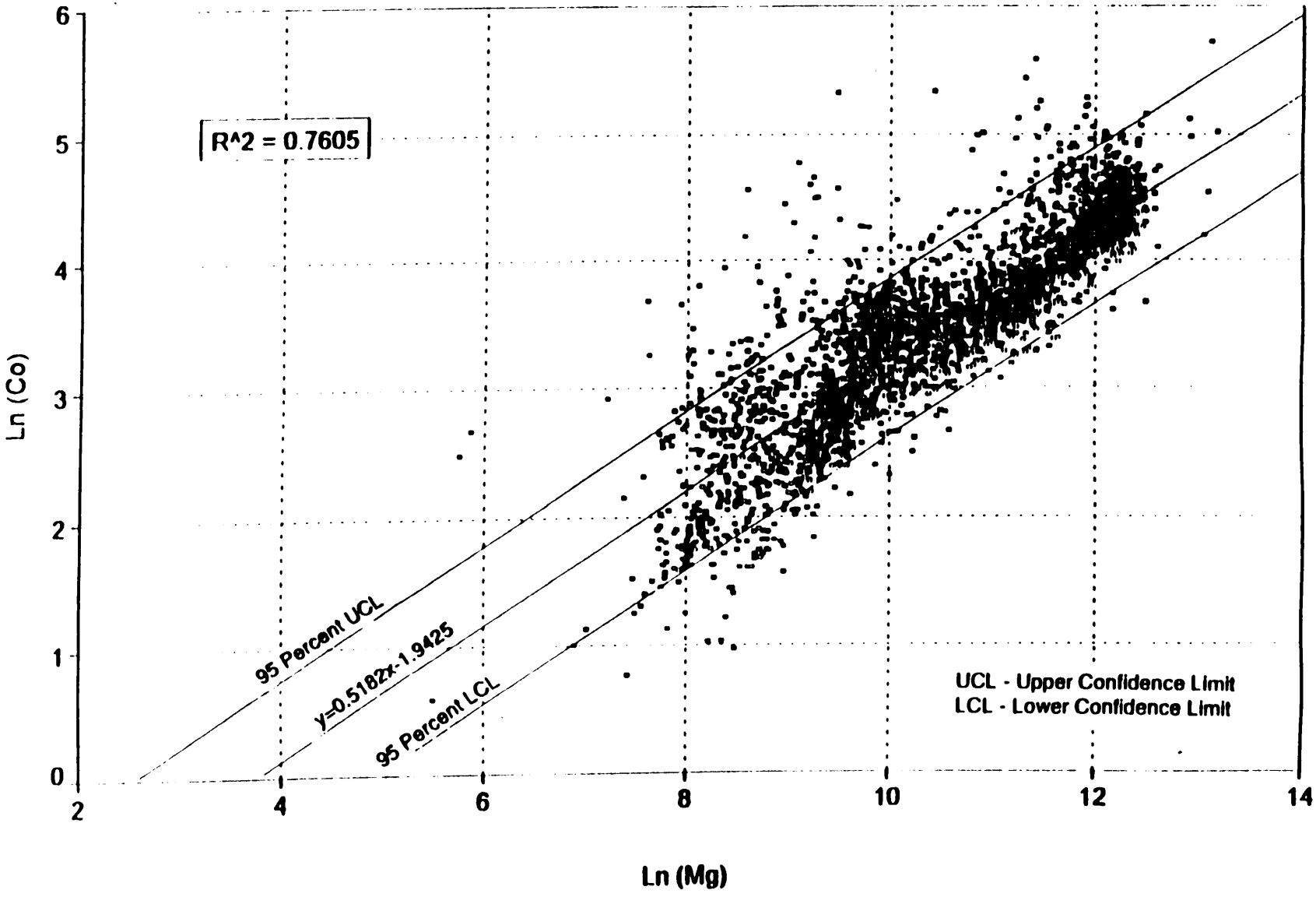
Cobalt/Magnesium Regression Relationship and Project Action Limit Comparison Table

Sample ID	Magnesium Concentration in Sample (mg/kg)	ln(Mg)	ln(Co)[1]	Cobalt PAL (mg/kg)	Cobalt Concentration in Sample (mg/kg)	PAL Comparison
UC1/2-BS-05	3000	8.01	2.21	9.08	8.9	OK
UC1/2-BS-06	3500	8.16	2.29	9.84	8.4	OK
UC1/2-BS-07	3600	8.19	2.30	9.98	8.7	OK
UC1/2-BS-08	5900	8.68	2.56	12.90	9.5	OK

1. A sample specific Hunters Point ambient level (HPAL) was calculated based on an HPNS cobalt/magnesium regression-based relationship (PRC Environmental Management, Inc., 1995). The natural log of the cobalt PAL is related to the natural log of the concentration of magnesium detected in each sample by the following relationship: $y = 0.5182x - 1.9425$. See attached "Cobalt/Magnesium Regression - Log Transformed" figure from the HPAL Technical Memo (PRC Environmental Management, Inc., 1995) for more information.

Cobalt/Magnesium Regression - Log Transformed

All Soil Types



Number of Nondetect Samples: 25 -- Percent of Nondetect Samples: 0.82